Section Three

Describe the Community's Plan of Action

Major plans have been developed and are being implemented for the three major basins within the St. Johns River - the lower, middle and upper basin projects. The Upper St. Johns River Basin Project, a joint effort between the St. Johns River Water Management District (SJRWMD) and the U.S. Army Corps of Engineers, is over ninety percent complete. The massive $177 million dollar flood protection and restoration project includes more than 125,000 acres of pristine and restored freshwater marshes. Strategically, restoration efforts began at the St. Johns River headwaters and then moved downriver. The Middle St. Johns River Basin projects include water quality, flood protection and restoration efforts in Lake Jesup, the major tributary to the St. Johns River. Implementation efforts are now being focused on the Lower St. Johns River Basin, recognized by the state as an original Surface Water Management and Improvement (SWIM) project area.

The work in these three areas of the river is multi-faceted and represents unprecedented cooperation among cities and counties along the 310 mile length of the river, cooperation which includes a regional water management district, and federal, state and local governments. Just as the St. Johns is diverse in nature, ranging from marshlands to lakes to a deepwater port at its mouth, the communities and stakeholders along its path differ in their uses and needs pertaining to the river. The diversity however is an asset, because all parties recognize they must work together to achieve a common cause and common goal -- restoration and preservation of the St. Johns River. Great progress has been made over the past two decades, but more must be done and progress maintained on a perpetual basis.

An unprecedented team has evolved to implement the next big phase of the river plan. The leadership group includes the Mayor of Jacksonville, the State Speaker of the House-elect, the President of the Jacksonville City Council, Executive Directors of the St. Johns River Water Management District and Department of Environmental Protection's Jacksonville office, CEO of Jacksonville Electric Authority (new lead agency for wastewater and stormwater in Duval County), and a leading citizen advocate. The team has been meeting regularly to address issues and suggested actions that came out of four public hearings held along the river, citizen surveys, and on-going citizen and elected official input.

Evidence of such cooperation, ironically, is occurring on the very day this application is being filed (December 10, 1997). In Jacksonville's Prime Osborn Convention Center, nearly 400 citizens, stakeholders and government officials came together for the "St. Johns River Strategic Planning Session," more commonly known as the "River Summit." For one full day, participants from throughout the river region received reports on the current state of the river, its problems, and challenges. The summit participants then, dividing into smaller breakout groups, pitched in and proposed solutions, goals and timetables to restore and preserve the St. Johns, while taking advantage of its great assets.

The summit was proceeded in 1997 by a series of town meetings in Jacksonville (June 23), Palatka (June 24), Sanford (June 25) and Palm Bay (June 30), in which citizens shared their concerns and helped propose solutions and a vision of what they would like to see of the St. Johns River in the year 2010. Citizen involvement and government assistance and cooperation is considered a key role in this endeavor.

As a result of these public hearings and the St. Johns River Strategic Planning Session, many proposals are in place, and officials from neighboring counties and cities, as well as federal, state and regional officials plan to meet regularly to continuously review the status of on-going projects, to make adjustments when necessary, and ensure goals are met in a timely manner. This cooperative effort between all levels of government and the community is important to ensure commitment, efficiency and success in meeting the challenges facing

the river. The community plans and goals for the St. Johns are consistent with those of the American Heritage River initiative and make the river an ideal candidate for inclusion in the program.

Resources/funding: A major source of funding and resources is handled by a regional planning board called the St. Johns River Water Management District. Its members are appointed by the Governor of Florida. Commitment to preserving the St. Johns River is evident in the amount of local and state funding. The 1998 fiscal year budget for the SJRWMD is $137.2 million, with $37 million carried over from the previous year. Of that, $61.3 million is contributed by counties along the St. Johns River, primarily via ad valorem taxes. The State of Florida in FY 1998 will contribute $35.4 million. The federal government will commit $2.8 million. The numbers show state and local governments have taken the lead in the effort to protect this valuable resource.

Special St. Johns River projects that are currently or will be underway include:

Upper St. Johns River Basin Project

This basin is located in east central Florida and stretches north for 85 miles through Indian River and Brevard counties, including 150,000 acres of wetlands, lakes, river and upland habitat.

As a measurement of success, the project, begun in 1986, is now 90 percent complete. During this time, the area was transformed from a highly structural flood control project into a national model of modern floodplain management. It was a joint effort by the SJRWMD and the U.S. Army Corps of Engineers.

Nearly a century ago, the vast marshes of this area were drained in the name of progress. Communities, farms and citrus groves sprang up where wetlands had formed the headwaters of the St. Johns River. In the 1960s, in response to flooding problems, a federal flood control project was partially constructed but the project was abandoned because of the potential for environmental harm.

The ongoing plan is a large, multipurpose public water project, representing a semi-structural approach to water management which attempts to balance various environmental and economic goals. While flood control remains a major component, it now relies less on artificial controls, and more on the function of natural river floodplains to store and manage floodwaters. Water quality improvements have been realized because agricultural waters are stored in several water management areas, and remain separated from marsh conservation areas.

Had this new Upper St. Johns River Basin project not replaced the antiquated plans of the past, state water managers today would be faced with a much more costly cleanup of Florida's longest river. Compared with the skyrocketing efforts to restore and cleanup the Florida Everglades, the $177 million spent to restore the St. Johns River is hailed as the state's best public water deal of this decade.

Projects in the Middle St. Johns River Basin

The middle St. Johns flows through Orange, Lake, Volusia, Seminole and Marion counties. Over 410,000 acres of public lands in the middle reaches of the river have been acquired to protect and enhance the river. The old practice of discharging secondary sewage into the tributaries has ceased. Urban stormwater parks have been created in the watershed to reduce non-point pollution in several areas. The legislature dedicated specific funds to address water quality and flood protection issues in Lake Jesup and the Little Wekiva River.

Work in major tributaries like the Ocklawaha has been intense. Lake Apopka, Florida's fourth largest polluted lake, is being restored through a major farm buyout made possible by state and federal funding. Water quality is improving, native aquatic plants are growing for the first time in fifty years, and there has been a resurgence in sportfish. Further downstream, sections of the Ocklawaha River used for muck farms are being restored.

Lower St. Johns River Basin Management Project

The groundwork has been laid for efforts directed at the lower reaches of the river. Partners have come together to provide resources and address the issues and solutions that have been developed through thoughtful research. This is a five year plan of the St. Johns River Water Management District aimed at the

protection and restoration of the lower basin (the northern 101 miles of the river) to Class III or better water quality. This classification means it is suitable for fishing and recreation.

Part One. Over the next five years, $27.9 million is being committed to reduce pollution from urban and suburban areas. That includes $21 million aimed at reducing point source pollution (nitrogen & phosphorus); implementing cost-effective technologies (AWT, BNR, reuse, etc.) at priority waste water treatment plants (WWTP). In some cases, WWTPs through water reuse will totally eliminate any discharge into the river; in other cases, it involves WWTP treatment upgrades; and in other areas, WWTP services will be extended to areas that are unsuitable for septic tanks.

A program to reduce non point source pollution (toxins and sediments) is projected to cost $6.9 million over five years. That involves implementing Jacksonville's stormwater management water quality enhancements in priority basins; retrofitting existing stormwater systems with in-line treatment devices, multipurpose strategies such as stormwater parks, and an increased septic tank code enforcement project.

Part Two. An additional $5.9 million is budgeted to rehabilitate degraded aquatic habitats. It includes initiating the restoration of Doctors Lake, restoring natural flow to various creeks, lakes and sloughs. $5 million is dedicated to restoring the historic flow at Mill Cove, a huge basin that exists where the St. Johns River takes a dramatic turn from the North to the East just 10 miles before it empties into the Atlantic Ocean. The project will also initiate the replanting of historic Submerged Aquatic Vegetation (SAV) beds.

Part Three. Partially implemented, part three is aimed at reducing pollution (nitrogen, phosphorus and sediments) from farming areas in the tri-county agricultural area at a cost of $8.35 million. Part of the plan is to implement row crop Best Management Practices (BMPs) over the next five years and implementing dairy farm BMPs. This is projected to cost $1.8 million. The plan also calls for the creation of regional treatment wetlands for eight priority agricultural watersheds, and acquiring riparian buffer zones in agricultural watersheds.

Part Four. Preparing for the next five years, this $11.8 million project is aimed at developing and improving eutrophication management (developing technologies to improve water quality; monitoring water quality for effectiveness of BMPs; and diagnosing water quality problems); toxic pollution management (monitoring sediment quality and biological health); sediment management (developing a sediment transport model for key watersheds; developing management tools; and the operation of monitoring networks); and aquatic habitat management (developing BMPs to protect SAV; determining relationships between water quality and SAV health; monitoring and mapping the extent of SAV beds basin-wide; and monitoring phytoplankton growth patterns).

The Lower St. Johns River Basin (LSJRB) Restoration Plan is a hard hitting effort that should have a significantly positive impact on the overall health of the river. State Speaker of the House-elect John Thrasher has developed a funding proposal to assist with the implementation of the LSJRB project. he will ask for a special appropriation of $10.5 million during this legislative session and during the next four sessions to further the work identified in the LSJRB plan.

Other vital partners are coming forward to support the efforts of the lower St. Johns River SWIM project. The unprecedented efforts are outlined below.

Private Sector/Watershed Action Volunteers

Over the past years, the St. Johns River Celebration annual clean-up has attracted more than 11,000 volunteers throughout 17 counties. Volunteers have collected over 700,000 pounds of trash from the St. Johns River and its tributaries. This year, a stormwater stenciling campaign will be added to the clean-up activities.

While government necessarily plays the lead role in the effort to restore and preserve the St. Johns River, thousands of citizen volunteers are now involved in a perpetual effort to achieve the same goal. Groups such as the Stewards of the St. Johns and SAVE the St. Johns play a key role in preservation efforts. One of the fastest-growing volunteer groups is the Watershed Action Volunteers (WAV). They check water in the St. Johns for chemicals such as fertilizers that run off lawns, farms and dairies, or are piped into water bodies from wastewater plants. They also measure the amount of dissolved oxygen, salts and acids in the water.

City of Jacksonville's Stormwater Management Program

As the largest city along the St. Johns River, the City of Jacksonville plays a vital role in the overall health of the river. Maintaining a clean and viable river is a top priority of local government as evidenced in its many initiatives focused on water quality. The City of Jacksonville has developed a National Pollutant Discharge Elimination System (NPDES) Storm Water Management Program involving both public participation and intergovernmental coordination, particularly with the Florida Department of Environmental Protection. The program commenced on April 1, 1997 under a five-year federal NPDES permit, and will be eligible for renewal upon expiration. Among its many elements, the program includes:

- Management practices, control techniques, system design and engineering methods to reduce the discharge of pollutants to the maximum extent practicable
- Control of storm water runoff from commercial and residential areas, construction sites and industrial facilities (including waste handling facilities)
- Operation and maintenance of structures controls such as detention controls, infiltration controls and filtration controls
- Identification and termination of illicit discharges
- Control of pollutants related to application of pesticides, herbicides and fertilizers.
- Implementation of standard investigative procedures to identify and terminate sources of illicit connections or discharges, and efforts to prohibit illicit connections and discharges
- Public education

As evidence of the City's commitment to this program, $66 million in bonded funds were recently allocated to the program by the Jacksonville City Council. The money will be used to eliminate flooding and improve water quality throughout the city/county area.

City of Jacksonville's Water Quality Branch Initiatives

The City of Jacksonville's Water Quality Branch (WQB) is charged with the long-term goal of attaining a quality of water which protects human health, prevents injury to plant and animal life and promotes economic and social development. In support of this goal the branch is committed to perform the following functions:

Point Source Program

The permitting program continues to produce outstanding performance in regulating point source dis-

charges. Since EPB Rule 3 was amended to better define feasibility and availability of regional sewerage connections, many wastewater facility (WWF) discharges have been removed bringing the total inventory of WWFs in Duval County from 393 in 1986 to under 100 today. The removal of non-regional WWFs means more than just the reduction in WWF inventory because its effects on our water environment will be realized gradually for the years to come. The removal of these discharges represents a reduction in pollutant loading in the receiving basins, lakes, creeks, or groundwater that all end in the St. Johns River.

The point source inspection program focuses its resources on wastewater pump station inspections and citizen complaint investigations. As regional utilities are expanding their sewer services, more pump stations are constructed. A failure occurring at a major pump station can cause thousands of gallons of sewage to overflow into the surface water. The short-term damage may be a sanitary nuisance condition or fish kills. But the long term effect is unpredictable. Sewage overflow has been a major sanitary problem and a contributor to the water quality degradation. EPA has recently directed the City to develop a plan to minimize the infiltration and exfiltration of the sewerage system.

The high level of coliform bacteria readings in water of many of the area's tributaries are linked to the sewage overflow and failed septic tanks in the adjacent areas. Coliform bacteria has been used to indicate the present of feces of warm blooded animals and a potential presence of pathogens. However, its presence does not always mean harm to human health. To better identify the contaminated source, a study is being proposed by the University of North Florida (UNF) to separate the coliform bacteria related to human origin. The Water Quality staff is providing assistance to UNF in conducting the study which is being funded, pending Jacksonville City Council approval, by the Jacksonville Environmental Protection Board.

As a parallel task to the bacteria study, WQB staff is coordinating an interagency effort with the Jacksonville Electric Authority (JEA) and Duval County Health Unit (DCHU) to survey the entire county to identify failing septic tank areas. Failed septic tank areas will be evaluated and prioritized for construction of sanitary sewers to connect to the regional wastewater treatment system.

Ambient Water Quality Monitoring

The City's Ambient Water Quality Section (AWQS) is the lead environmental agency collecting surface water quality data in Duval County. As such, AWQS closely coordinates all of its monitoring activities with other agencies working in the area. All of the data collected by AWQS are regularly provided to state, regional and local agencies charged with permitting activities that may impact surface water quality. This information is available to the public upon request. The AWQS is also the lead agency responding to citizen complaints or fish kills for surface waters of the state in Duval County.

The surface water quality monitoring programs of AWQS are directed to three specific tasks of importance for Jacksonville. The first program is called the "River Run". The River Run program is a monthly sampling event conducted with the assistance of the Jacksonville Electric Authority Water and Sewer Business Unit at 31 locations in the mainstem of the St. Johns River. Goals of this program are to monitor for water quality trends and collect water quality data to assist in establishing Water Quality Based Effluent Limits (WQBEL) for surface water dischargers in Duval County. The second program is the "Tributary Program". As the name implies the focus of this program is monitoring water quality in the tributaries of the St. Johns River in the consolidated Jacksonville/Duval County. Slightly over 100 sites along Jacksonville tributaries are monitored quarterly for a variety of different parameters. The third program is the "Timucuan Preserve Program". The Timucuan Program began in February 1997. This program is a cooperative effort between the City and the National Park Service (NPS). The purpose of this effort is to collect water quality data for the surface waters in and adjacent to the Timucuan Ecological and Historic Preserve. The information will be used by the NPS and City to make land-use decisions in this area of the county. With the exception of the Timucuan Program which just began, brief data summaries for the programs follow.

In addition, the City's Regulatory and Environmental Services Department recently concluded a two-year nutrient study of the St. Johns River. The data, along with other information, will be figured into a formula by the Florida Department of Environmental Protection to determine the Total Maximum Daily Load (TMDL) of nutrients that the river can assimilate without degradation. The TMDL will then be taken into consideration when wasterwater discharge permits are issued or reissued, and also will be used in planning for stormwater treatment design.

Jacksonville Electric Authority Initiatives

Large corporate citizens in Jacksonville have dedicated great resources to ensure minimal impact to the river, and the Jacksonville Electric Authority has committed to go beyond what is required of regulatory agencies to maintain a strong and viable river. At the St. Johns River Strategic Planning Meeting in Jacksonville on December 10, 1997, several significant announcements where made by the Authority:

- In 1998, the JEA will initiate a Biological Nutrient Removal (BNR) demonstration project at one of its wastewater treatment plants. The project will utilize modifications to existing, under-loaded equipment to test capabilities for the low-cost removal of nutrients in wastewater effluent.

- The JEA will design and implement an intense industrial pretreatment partnership with our industrial/commercial customers aimed at significantly reducing contaminant discharges to the wastewater stream. The goal will be to have all industrial discharges now in violation in compliance or on a compliance schedule by the end of 1998. The program will include the JEA's participation in a national initiative to reduce silver discharges through a cooperative effort with affected industries.

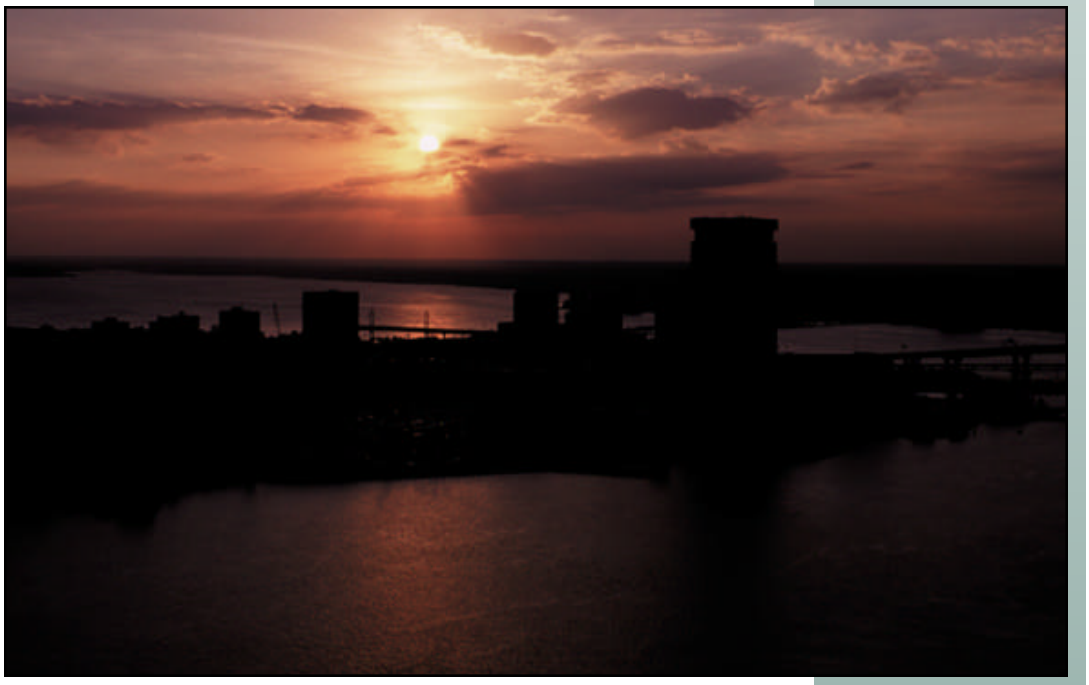
- The JEA will design immediately a 1 million gallon per day reclaimed water capacity at one of its wastewater treatment plants. Potential customers in the area already identified for reclaimed water are golf courses, a park and highway medians.

- The JEA will eliminate at least 10 WWTP discharges in Duval County in the next three years. Through consolidation of existing small wastewater treatment plants into the five JEA regional systems, the benefit of a few, high-quality discharges replacing several discharges from aging facilities will be realized.

- In 1998, the JEA will begin design and construction of a demonstration project to grow trees on a farm super-irrigated using reclaimed water. Trees provided by the program will be available for use in beautification and soil-stabilization projects throughout Jacksonville.

Public Education

Public education, particularly education of children, is crucial to ensuring that our river is protected for future generations. Teaching kids to value this vital natural resource is an important first step in preserving the St. Johns. The St. Johns River Water Management District administers a number of programs to help strengthen the appreciation and understanding of our river and its needs. Project WaterWays for example, targets children in grades 4-8 and provides hands-on experience while strengthening critical thinking and cooperative learning. Project WET is another water curriculum which targets grades K-12. The project is a joint effort between local, state and national agencies. Project Legacy was established in 1993 in Nease High School in St. Augustine. A collaborative venture between the St. Johns River Water Management District and area schools, the projects are fully funded by Learn and Serve Florida community service education grants, Florida Advisory Council on Environmental Education (FACEE) grants, and/or EPA grants. Student participants educate other students and citizens in their communities.



Measures of Performance:

Great strides have been made in improving the quality of the St. Johns River, which only 25 years ago, actually had open sewers and other point sources of pollution being dumped untreated into the river. That has changed. Key measurements include the following:

- Number of watersheds meeting designated uses.

According to the 1996 DEP 305(b) Water Quality Report, 437 (65%) of the 670 watersheds in the SJRWMD are supporting designated uses. Indicators used to determine whether watersheds are meeting designated uses include dissolved oxygen and bacteria counts.

Dissolved Oxygen (DO) is a key measure for the environmental health of aquatic ecosystems. Like animals, aquatic organisms require oxygen for their metabolic respiration. Prior to 1972, DO problems caused by toxic industrial discharges, poorly treated domestic wastewater discharges, and many others affected the St. Johns and other rivers. In response, Congress passed the Federal Water Pollution Control Act in 1972. The results, along with state and local efforts, have been encouraging.

From 1968 to 1972 at Main Street in Jacksonville, violations of Class III standards occurred 162 times out of 1,147 observations (14.1% violation rate.) By comparison, at the same station between 1990 and 1997, there were only 6 violations out of 190 observations (3.2% violation rate). So there has been great improvement. But maintaining that progress, and managing oxygen demand from human activity and development is imperative, especially in Florida, where population and developmental growth is among the highest in the nation. For this reason, we must remain vigilant in removing oxygen from point source discharges in tributaries where re-aeration is weaker than mainstem flow and initiatives are developed to lessen oxygen demand from stormwater systems and other non point source discharges.

Another measure of performance has been in bacteria counts associated with the St. Johns River. Again improvement has been significant. At the same Main Street bridge location in Jacksonville, the Total & Fecal Coliform (MPD) counts have changed drastically. From 1959 to 1976, Total Coliform averaged 14,400/100ml. There was an average of 87 Class III violations per year for both measures during this time frame. An average of 90.4 percent of the total number of observations were violations. In contrast, from 1977- 1997, there was an average of only about 5 violations per year, or an 8.2 percent violation rate. Clearly, the addition of disinfection and basic wastewater treatment has had a remarkable impact in reducing the bacteriological pollutant levels in the St. Johns. This progress must be maintained.

- Reduction in concentrations of inorganic nitrogen.

The major efforts underway to implement more reuse, addressing current point source discharges, will assist in this measure.

- Reduction in toxic metals.

Implementation of portions of the City of Jacksonville's stormwater master plan will assist with this measure since road run off contains much of the heavy metals.

- Increased acres of submerged aquatic vegetation.

In the lower St. Johns River, freshwater and estuarine grasses have been mapped from aerial photography. A hydro-acoustic mapping system has been acquired that will indicate the location of the submerged vegetation in deeper water as well as its density and height, and depth of muck on the bottom.

Expected Federal Role:

The American Heritage River initiative provides a unique and innovative opportunity for the federal government along with state and local governments, communities and citizens, to work in partnership for the betterment of an important resource.

Citizens benefit when government agencies work cooperatively, rather than unilaterally. Together, communities along the St. Johns River and the federal government will be able to sustain existing programs that are

making progress; review with a critical eye any that may not be working as well as they should; and planning what future initiatives might best benefit not only the St. Johns, but all American Rivers.

Because of our many local initiatives, there could be mutual benefit between communities along the St. Johns River and the federal government in the sharing of technology, creative ideas, and a willingness to undertake pilot projects to determine if they might be of benefit to other areas of the country. The role of the River Navigator is also an intriguing one. The City of Jacksonville was already considering legislation for a "river keeper" therefore selection as an American Heritage River would dovetail nicely into a role that would benefit a much larger area, and provide greater access, liaison, and efficiencies between federal and local governments.

Community Vision:

Through the initiatives outlined in this section and many others, it is clear that citizens in communities along the St. Johns River believe that this river is the lifeblood of northeast and central Florida. Progress has been made, but must be maintained and even accelerated. The communities want a river that can be restored and preserved so that future generations may enjoy and benefit from it, even more so than whose who have depended on it in the past. The communities want a river that is clean, where aquatic and wildlife can abound, where ecosystems can flourish in their natural state, where recreational opportunities are available for all, while at the same time reaping the economic benefits the river already provides us. In essence, we believe the St. Johns River is not just Jacksonville's River, or Florida's River, but it's America's River -- part of our heritage, our American heritage. Our vision is that the St. Johns River is the perfect prototype for the initiative President Clinton has thoughtfully undertaken. It is indeed an American Heritage River.